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PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Steven BATHICHE

Serial No.: 10/630,937
Filed: July 31, 2003
For: CONTEXT SENSITIVE LABELS FOR A HARDWARE INPUT DEVICE

Atty. Docket No.: 003797.00563
Group Art Unit: 2677
Examiner: Shapiro, Leonid
Confirmation No.: 1230

DECLARATION UNDER 37 C.F.R. § 1.131

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, STEVEN N. BATHICHE, hereby declare that:

1) I am the sole inventor of the above-captioned patent application, U.S. Application Serial No. 10/630,937, and all subject matter claimed therein.

2) I am presently employed by Microsoft Corporation ("Microsoft"). Microsoft is the assignee of the above-identified application.

3) I was employed by Microsoft during development of the subject matter of the claims in the above-identified patent application.

4) Prior to September 19, 2002, I reduced to practice the invention recited in at least claims 1-26 and 36-38 of the above-identified application.

5) Actual reduction to practice occurred prior to September 19, 2002, as evidenced by Exhibit A, page 33 of my Microsoft Lab Notebook (dates redacted); Exhibit B, the email string "EL lighting for keyboard" between Yoshi Yagi of Panasonic and me (dates redacted); Exhibit C, the email string "EL questions and switch progress" between Yoshi Yagi of Panasonic and me (dates redacted); and Exhibit D, the EL Element specification generated by Matsushita Electronic Components Co., Ltd.

(a.k.a. Panasonic) (dates redacted). Each of these documents was prepared prior to September 19, 2002.

6) Exhibit A, page 33 of my Microsoft notebook is directed to keyboard keys with a display. The document identifies that the display on keys shows the currently assigned action or function for that key. As described, a user would not have to learn or memorize the key functionality as the displayed image on the key would be context sensitive. For example, depending on the software application different functions can be shown, i.e., toolbars, games, and languages.

7) Exhibit D, the EL element specification, shows a configuration of an embodiment of the invention which engineers from Panasonic put together that allowed me to test the invention prior to September 19, 2002 using software that I developed for four separate scenarios (i.e., editing (CUT, COPY, PASTE, UNDO); email (REPLY, FORWARD, SEND, SPELL); media player (PLAY, PREVIOUS, NEXT, STOP); and browsing (BACK, FORWARD, SEARCH, FAVORITES)). The layers are stacked on each other and represent a strip with two scenarios per layer, which can be placed adjacent to four keys of a keyboard. Regarding the subject matter of independent claims 1, 19 and 36 and claims 2-7, and 9-15, which ultimately depend from claim 1, claims 21, 22, and 24, which ultimately depend from claim 19, and claim 38, which depends from claim 36, this subject matter was reduced to practice. Prior to September 19, 2002, I tested this configuration by providing a control signal representing a first context (e.g., editing) to the first pattern layer, which in turn illuminated the functionality associated with an editing application on a portion of the first pattern layer, CUT, COPY, PASTE and UNDO. Thereafter, I supplied another control signal representing a second context (e.g., browsing) to the second pattern layer, which in turn illuminated the functionality associated with a browsing application on a portion of the second pattern layer, BACK, FORWARD, SEARCH and FAVORITES. Similarly, I supplied another control signal representing a third context (i.e., email) where another portion (REPLY, FORWARD, SEND, SPELL), of the first pattern layer was illuminated Though I had conceived of icons in place

of text on described in Exhibit A, page 33 of my Microsoft Lab Notebook, I did not include icons in my initial testing. However, it was apparent to me and would have been apparent to one of ordinary skill in the art that if the invention worked for text, it would have worked for icons.

8) Regarding independent claim 16 and claims 17 and 18, which ultimately depend therefrom, claim 20, which depends from claim 19, and claim 37, which depends from claim 36, I had conceived of the specific form of text, namely languages being displayed in place of text as described in Exhibit A, page 33 of my Microsoft Lab Notebook. I did not specifically include labeling the key based on the currently configured language in my initial testing. However, it was apparent to me and would have been apparent to one of ordinary skill in the art that if the invention worked for text, it would have worked for a specific form of text – namely languages.

9) Regarding claims 8, and 23-26, Exhibit B, the email string "EL lighting for keyboard" between Yoshi Yagi of Panasonic and me (prior to September 19, 2002) evidences my inventive concepts of the 2 EL (electroluminescent) layers being part of the key and more specifically being located either at the top of the key (Idea 2) or at the bottom of the key (Idea 1). Exhibit C, the email string "EL questions and switch progress" between Yoshi Yagi of Panasonic and me (prior to September 19, 2002), pertains to testing the implementation of two EL pattern layers in a key. The picture attachment to the email string shows a reduction to practice of the key including two pattern layers. Shown are the test results of the bottom layer in two conditions without mylar (25 cd/m2) and with dark transparent mylar (8 cd/m2) and the top layer without mylar (42 cd/m2) and with dark transparent mylar (12 cd/m2). Note that the word "MODE" was on both pattern layers. In this implementation, the EL pattern layers were located at the top of the key. While I had also conceived of placing the EL pattern layers at the bottom of the key, I did not include the pattern layers at the bottom of the key during initial testing. However, it was apparent to me and would have been apparent to one of ordinary skill in the art that if the

invention worked with the EL pattern layers at the top of the key, it would have worked for the EL pattern layers at the bottom of the key. In addition, it would have been apparent to one skilled in the art to use optical components to project the display of the label through the top of the key, for example to improve the brightness of the label.

10) Attached Exhibits A and D have not been altered since they were originally prepared except for the redaction of references to dates. Attached Exhibits B and C have not been altered since they were originally prepared except for the redaction of dates and the additional forwarding of the email to patent counsel, Gary Fedorochko.

11) I am over 18 years of age and of competent mind.

12) All statements made of my own knowledge are true and all statements made on information and belief are believed to be true; and further, these statements were made with the knowledge that willful, false statement so made are punishable by fine or imprisonment or both, under 18 U.S.C. § 1001 and that such willful, false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

Respectfully submitted,

STEVEN BATHICHE
Microsoft Corporation

1/19/2005
Date

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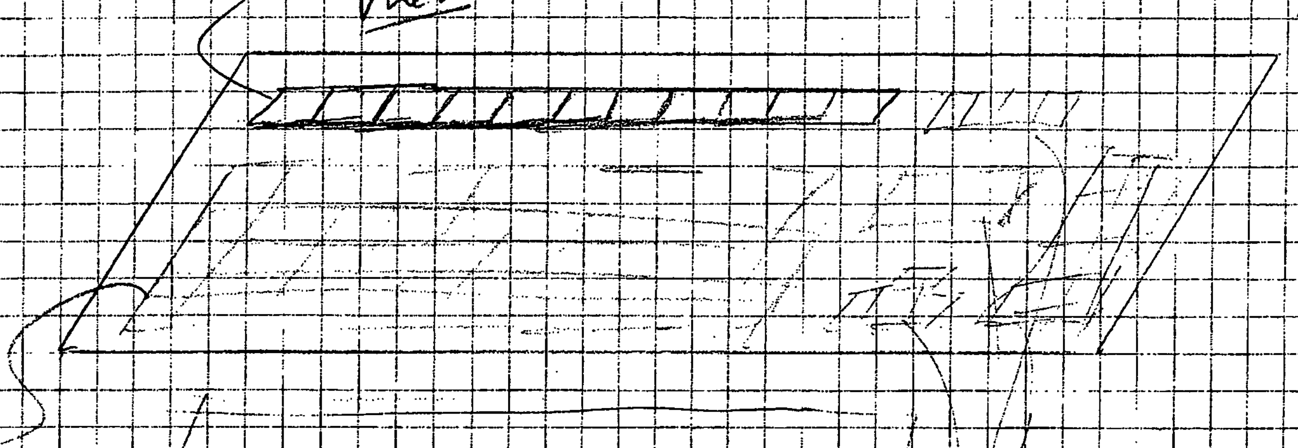
EXHIBIT A

BEST AVAILABLE COPY

either soft or keys w/ displays on them



Normal Chord / The Display on the "F" keys show the Normal current assigned Action/function for that key.

- The Displayed image is context sensitive
- the user doesn't have to learn or memorize the functions + does not have to associate a Code w/ a function
- The keys could display file icons and programs.
- depending on software applications different functions are shown. i.e. office toolbars vs. games vs languages

SUBJECT: LCD keys

PROJECT:

WORK AND RECORD OF: Steven Bathiche

DATE: [redacted]

WITNESSED AND UNDERSTOOD BY:

DATE: [redacted]

WITNESSED AND UNDERSTOOD BY:

DATE: [redacted]

EXHIBIT B

Gary Fedorochko

From: Steven Bathiche
Sent: [redacted]
To: Gary Fedorochko
Subject: FW: EL lighting for keyboard

Attachments: Idea1&2.pdf

Idea1&2.pdf (42 KB)

-----Original Message-----
From: Yagi, Yoshi [mailto:YagiY@PANASONIC.com]
Sent: [redacted]
To: Steven Bathiche
Cc: Sage, Bob/EES
Subject: RE: EL lighting for keyboard

Steve,

Here are some updates on the EL for Keyboard.

Idea # 1: the 2 layer EL is located at the bottom of the keycap.
Advantage) The keycap can be made smaller than that in 1st idea.
Disadvantage) The lighting character have to be seen though transparent rubber dome.

Idea # 2: the 2 layer EL is located just behind of top lens of the keycap.
Advantage) The lighting character can be seen clearly.
Disadvantage) The keycap is getting a little bit bigger than that in Idea #1.

<<Idea1&2.pdf>>
Do you think those ideas works well in your application?

Thank you,

Yoshi Yagi

-----Original Message-----
From: Steven Bathiche [mailto:stevieb@microsoft.com]
Sent: [redacted]
To: Yagi, Yoshi
Cc: Sage, Bob/EES
Subject: RE: EL lighting for keyboard

Ok Thanks. This might be good enough for a prototype, to see if we can sell the idea around here. I think if we could put together a very simple demonstration, our group here can make decision, and then we could address the specific technical issues.
Thanks,
Steve

-----Original Message-----

From: Yagi, Yoshi [mailto:YagiY@PANASONIC.com]
Sent: [redacted]
To: Steven Bathiche
Cc: Sage, Bob/EES
Subject: EL lighting for keyboard

Hello Steve,

Here is the 1st EL design idea. The character size in the drawing is the biggest size if we do not change the key size. I will send you more details later.

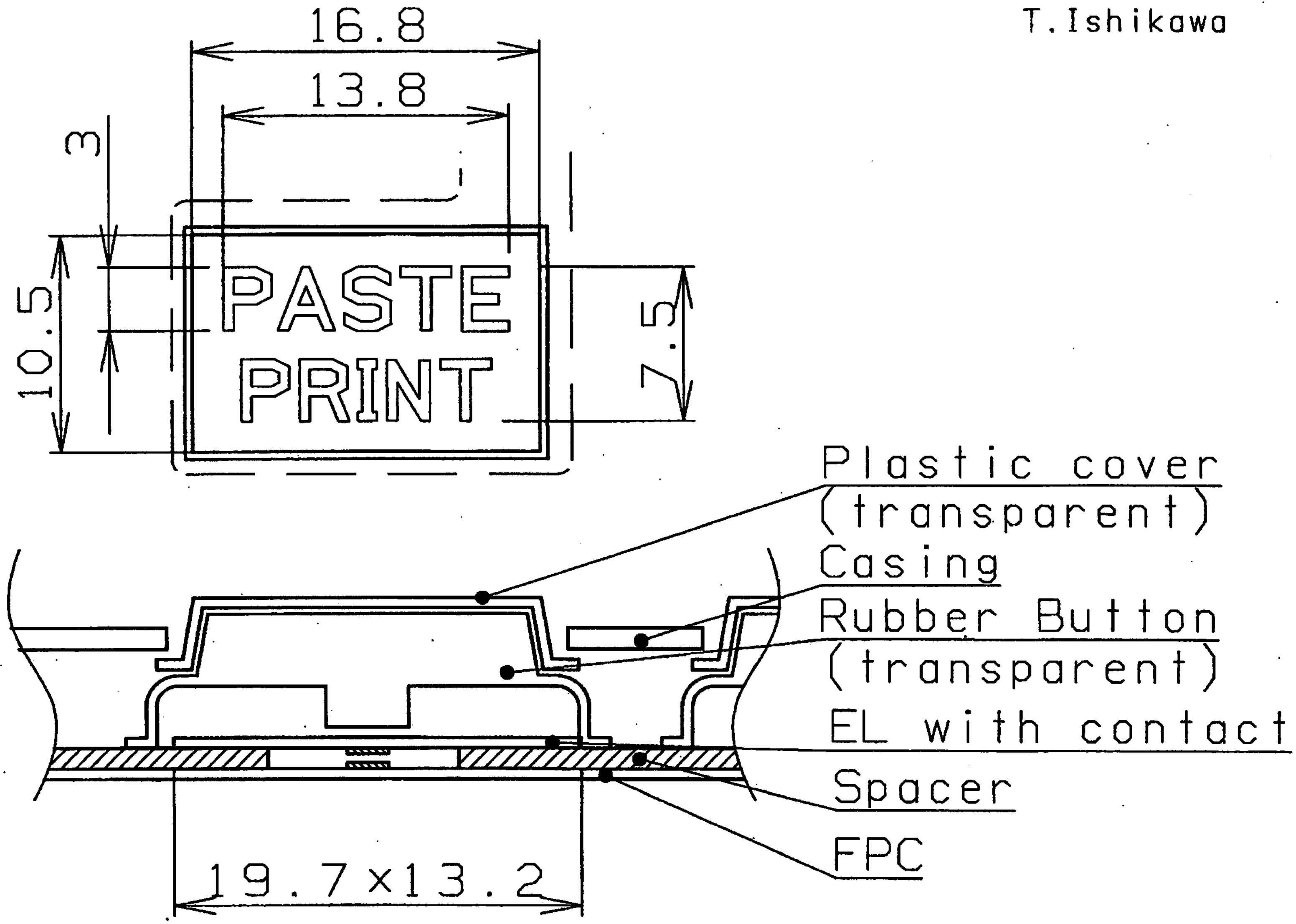
<<MS keyboards.PDF>>
By the way, Tak Nishimoto informed me that he left behind small sample box and name cards on your side desk. If you could find them, could you please keep them at the lobby? I will pick them up tomorrow [redacted]. I'm sorry for bothering you.

Thank you very much and best regards,

Yoshi Yagi
Resident Engineer for Electromechanical components www.maco.panasonic.co.jp
Panasonic Industrial company 6550 Katella Ave, Cypress, CA. 90630
Phone: 714-373-7331
Fax: 714-373-7323

Idea 1

[redacted]
Panasonic
T.Ishikawa


16.8
13.8
3
10.5
7.5
PASTE
PRINT
Plastic cover (transparent)
Casing
Rubber Button (transparent)
EL with contact
Spacer
FPC
19.7×13.2

Idea 2

[redacted]

Panasonic
T.Ishikawa

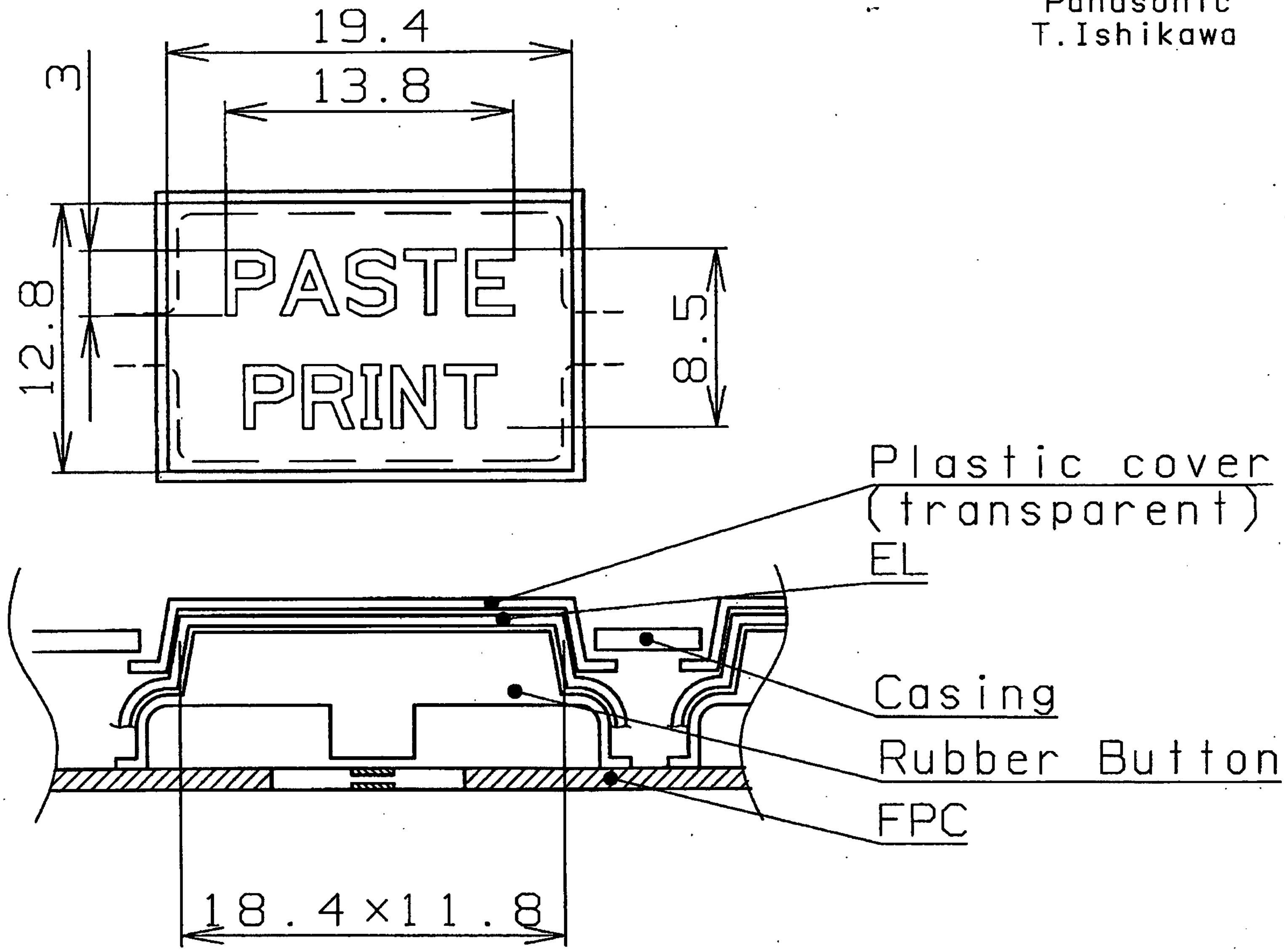

19.4
13.8
3
12.8
8.5
PASTE
PRINT
Plastic cover (transparent)
EL
Casing
Rubber Button
FPC
18.4×11.8

EXHIBIT C

Gary Fedorochko

From: Steven Bathiche
Sent: [redacted]
To: Gary Fedorochko
Subject: FW: EL questions and switch progress
Attachments: Microsoft.xls

From: Yagi, Yoshi [mailto:YagiY@PANASONIC.com]
Sent: [redacted]
To: Steven Bathiche
Cc: Sage, Bob/EES
Subject: RE: EL questions and switch progress

Hello Steve,

Thank you very much for your e-mail.
Here are the answers I provide with the factory engineer for your questions.

1. EL for Keyboard

>Is there a way to increase the contrast of EL? In a well lit room it is very difficult to
>see the letters. This could be a big problem.
EL is developed for people to see a screen (like LCD in a watch, cell phone and etc.) in a darker place basically. So it may be not bright enough to use in a well lit room.
The brightness of the sample I rent you is 25 cd/m2. It's bright enough in standard EL usage. But we assume 42-45 cd/m2 of brightness is required to see the letters in well lit room through the test we did instantly.

There are some ideas to increase the brightness and to see the letters more clearly.
1. To increase the brightness by changing the driver circuit condition.
Please review the attachment. (left hand side) you can see the difference.
We need more study to judge if this idea is feasible.
2. To add a darker color transparent mylar onto the EL.
The brightness got lower but the contrast got better. It's tough to see in the picture though. You may be able to put a mylar on the EL I lent you to check the look instantly.

>Is it possible to print the EL ink into a molded plastic?
No, it's impossible.

>What is the power consumption of EL?
It's depend on driver circuit. As for the sample's driver IC, SM8145A, it's about 5 - 6 mA totally (including EL's power consumption.)

>Is it good for wireless products?
While there are many cases, in general, it's no problem to use EL for wireless products.

>Is it possible for us to get some EL ink to use and work with and build our own >prototypes?
We can make your custom ELs. EL can not be made from raw materials without specific production line.

2. Switch for Stylus
Thank you very much for your information.
Could you please inform me which switch you're using now? the round mylar one or rectangle metal dome one?

Thank you,

[redacted]

Yoshi Yagi

-----Original Message-----
From: Steven Bathiche [mailto:stevieb@microsoft.com]
Sent:[redacted]
To: Yagi, Yoshi
Cc: Sage, Bob/EES
Subject: EL questions and switch progress

Hello Yoshi, sorry to bother you again, but I have not heard from you in regards to my questions bellow.

Also to let you know the switch works very well in my prototype. Thank you very much, it really helped the demo of the pen.

Thanks,
Steve

-----Original Message-----
From: Steven Bathiche
Sent[redacted]
To: 'Yagi, Yoshi'
Cc: Sage, Bob/EES
Subject:

Hello Yoshi some questions for you:

Is there a way to increase the contrast of EL? In a well lit room it is very difficult to see the letters. This could be a big problem.

Is it possible to print the EL ink into a molded plastic?

What is the power consumption of EL? Is it good for wireless products?

Is it possible for us to get some EL ink to use and work with and build our own prototypes?

Thanks,
Steve

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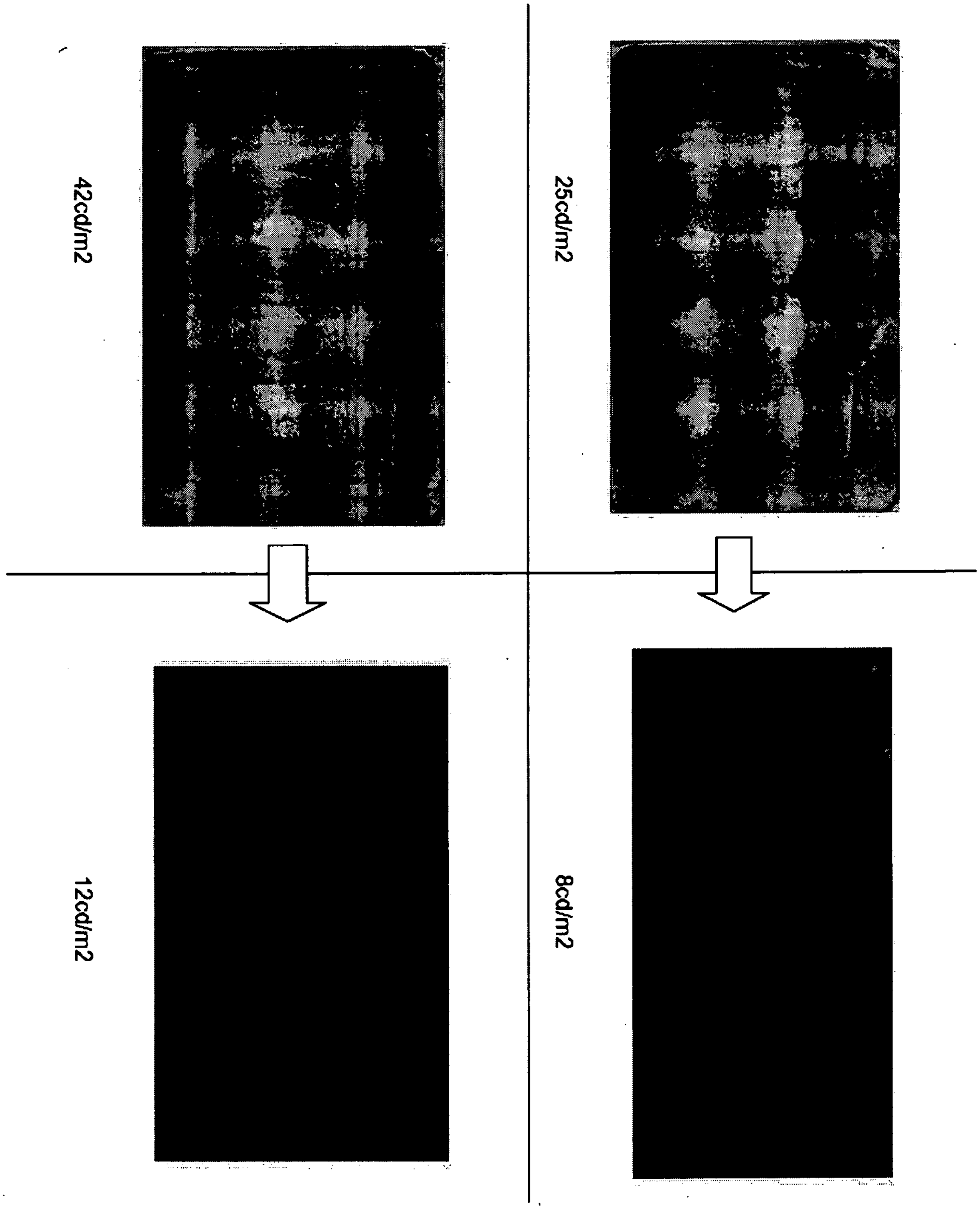

42cd/m2
25cd/m2
12cd/m2
8cd/m2

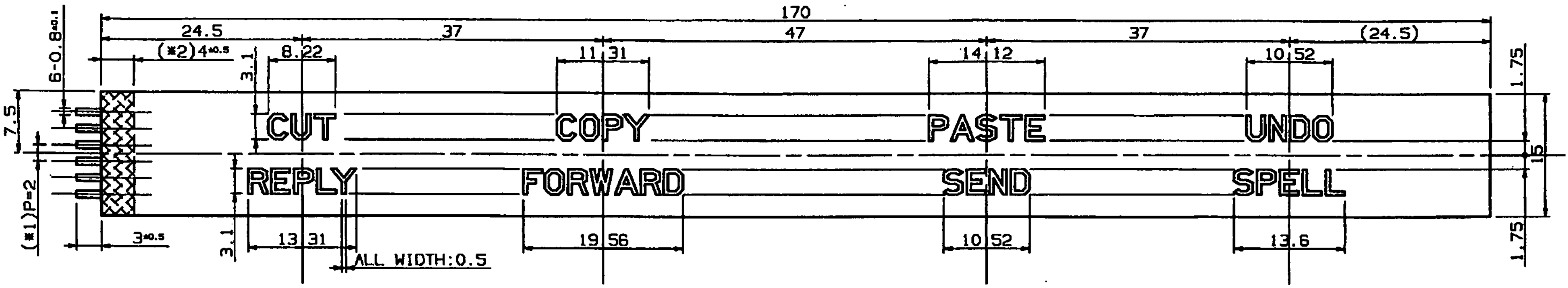
EXHIBIT D

pkb-espz969-151-1-r00 Pen2 6 Pen3 0

REFERENCE ONLY 参考図	Customer part Number:XXXXXXXXXXXXXX 納入先機種番号	Color : Blue 発光色：ブルー
Lighting side view 発光面視	Connection constitution:Metal terminal 接続部：金属端子仕様	

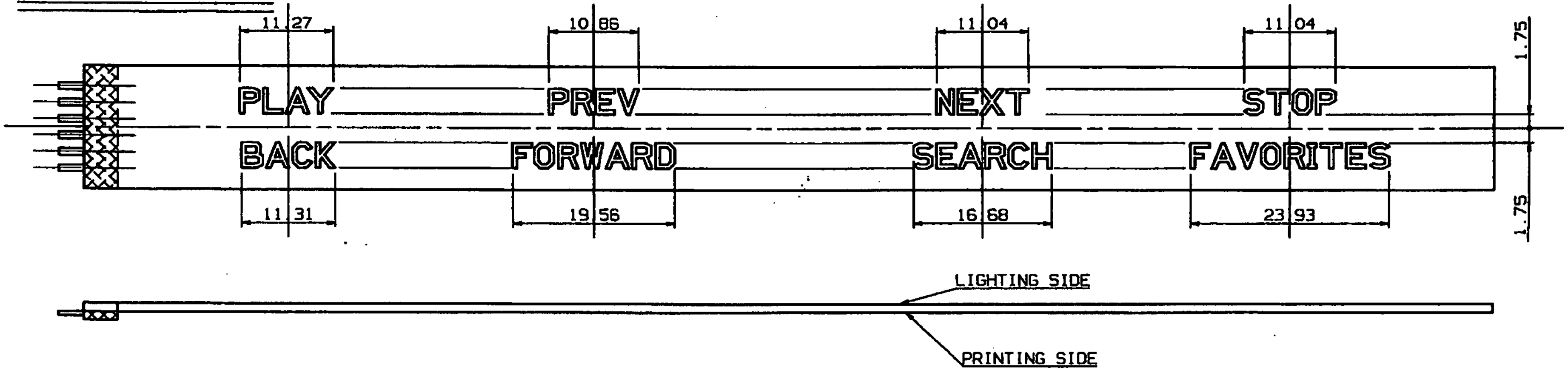
Commercial Tolerance(普通許容差)	Sym.	Date	Revision (改訂履歴)	Signed(承認)	Checked(検図)
±0.2	△				
	△				
	△				

FIRST LAYER



170
24.5
37
47
37
(24.5)
(*2)4±0.5
6-0.8±0.1
7.5
(*1)P=2
3±0.5
3.1
3.1
8.22
11.31
14.12
10.52
CUT
COPY
PASTE
UNDO
REPLY
FORWARD
SEND
SPELL
13.31
19.56
10.52
13.6
ALL WIDTH:0.5
1.75
15
1.75

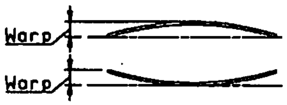
SECOND LAYER



11.27
10.86
11.04
11.04
PLAY
PREV
NEXT
STOP
BACK
FORWARD
SEARCH
FAVORITES
11.31
19.56
16.68
23.93
1.75
1.75
LIGHTING SIDE
PRINTING SIDE

SPECIFICASION 仕様

1. Edge insulation should be done on the EL body.
   EL端面の絶縁処理を行うものとする。
2. Dimension marked on (*1) shall be controlled at the root.
   Lose (*2) mark with a measurement of the seat which is reinforced.
   (*1)印寸法は、根元制限のみとする。(*2)印寸法は補材の寸法とする。
3. Warping 3Max.
   ソリは3Max.とする。



Sym.	Item or Code No.	Material & Size	qt.	Process	Remark
①	EL ELEMENT	BASE FILM 100μm	1	———	COLOR: Blue
	Z969	———	1	———	———

Esta. Date (制定)	[redacted]	Control	Promul Date (公布)	P.S.M.	REFERENCE ONLY (参考図)
Enfo. Date (実施)	[redacted]		[redacted]	———	Customer (ユーザ) Microsoft
Scale	Designed	Drawn	Traced	Checked	Promul
2/1	Ishikawa [redacted]	Tsukamoto [redacted]			

Name	EL ELEMENT
No.	Z969
No.	151-ESP-Z969-1 (R)

A3

MATSUSHITA ELECTRONIC COMPONENTS CO.,LTD.
松下電子部品株式会社

CUSTOM COMPONENTS COMPANY
カスタムコンポーネンツカンパニー

ELECTROMECHANICAL COMPONENTS DIV.
機構部品BU

3rd Angle System Unit:mm
(三角法 単位: mm)